

AUCTION BASED SCHEDULING

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Abstract: Distributed Scheduling has lots of opportunities for the contribution of different fields of science and technology such as artificial intelligence and economics. The introduction of agent structure to the solution of scheduling problems gives us the opportunity to elaborate on rational agents and to attach rational human characteristics to them. We deal with a scheduling problem within a distributed framework. We employ an auction theoretic mechanism to solve a single machine scheduling problem. The setting is such that there is a single machine and multiple jobs waiting to be processed on this machine. Job agents representing the jobs to be processed demand the discrete time slots from the machine agent representing the machine. We employ an English auction in which the job agents are bidders and the machine agent is the seller. The scheduling problem turns into utility maximization problem of each agent.

Keywords: *Distributed scheduling, Auction, Decentralized systems*